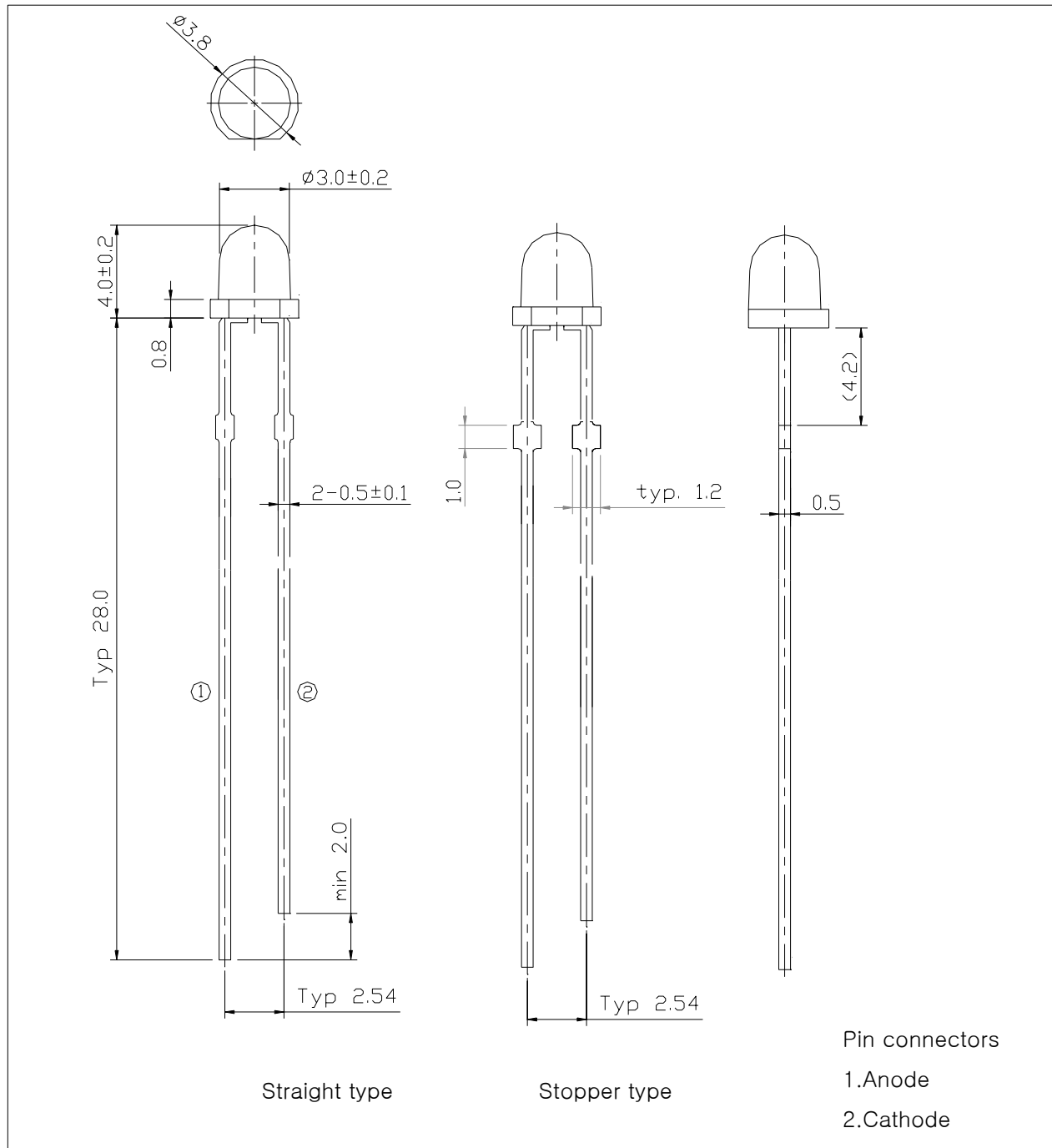


■ Features

- Colorless transparency lens type
- $\phi 3\text{mm}$ (T-1) all plastic mold type
- High luminosity
- ESD Class(Mil Std-883d Method 3015.7) based on Human Body Model(HBM) : 950V

■ Outline dimensions

(unit : mm)



■ Absolute maximum ratings

Characteristic	Symbol	Ratings	Unit
Power dissipation	P_D	120	mW
Forward Current	I_F	30	mA
* ¹ Peak Forward Current	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-30~85	°C
Storage Temperature	T_{stg}	-40~100	°C
* ² Soldering Temperature	T_{sol}	260°C for 3 seconds	

*1. Duty ratio = 1/16, Pulse width = 0.1ms

*2. Keep the distance more than 2.0mm from PCB to the bottom of LED package

■ Electrical – Optical characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
* ³ Forward Voltage	V_F	$I_F=20\text{mA}$	-	3.3	4.0	V
ESD Check Forward Voltage	V_{F2}	$I_F=10\mu\text{A}$	2.0	-	-	V
Reverse Current	I_R	$V_R=5\text{V}$	-	-	50	uA
* ⁴ Half Angle	$\theta_{1/2}$	$I_F=20\text{mA}$	-	±40	-	deg

*3. Voltages are tested at a current pulse duration of 1 ms and an accuracy of ±0.1V

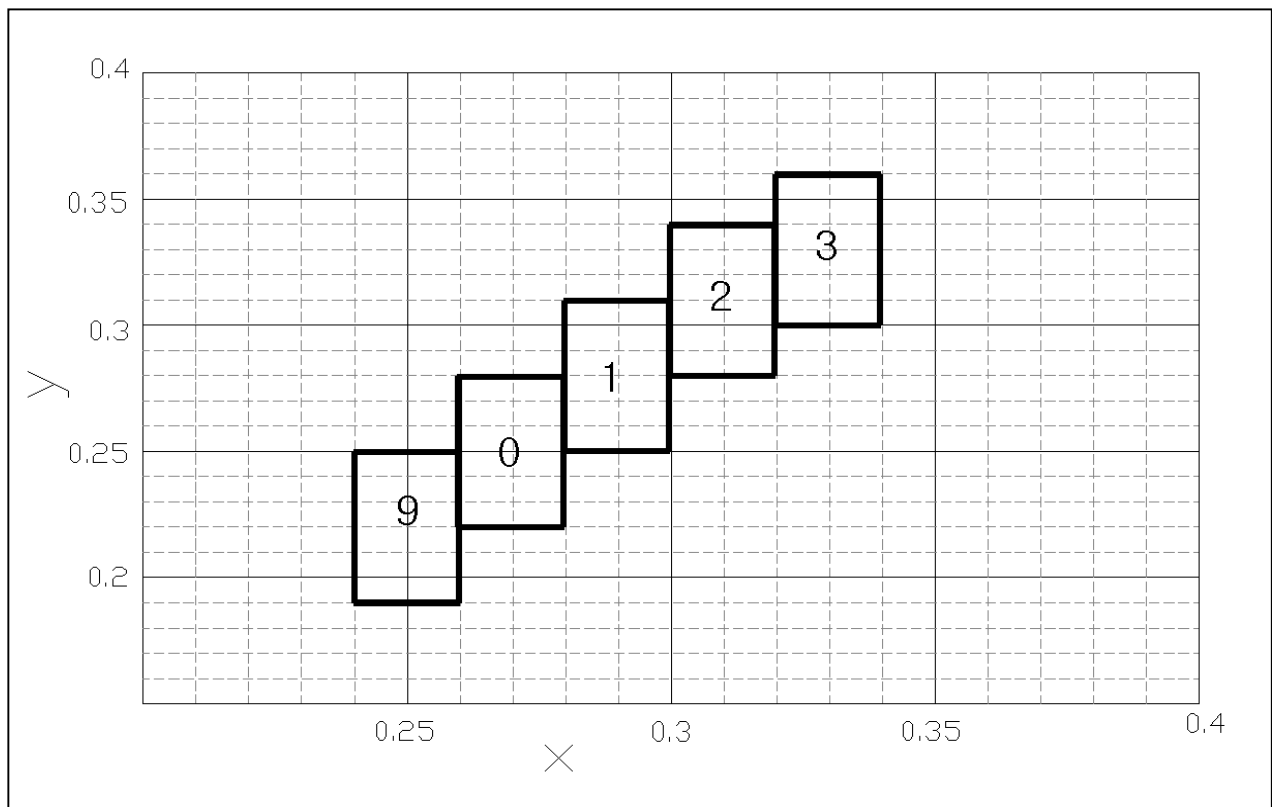
*4. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is 1/2 the peak intensity

■ Chromaticity Coordinates ranks

(Ta=25°C)

Color RANK		Test Condition	Min.	Typ.	Max.
9	x	I _F = 20mA	0.24	-	0.26
	y		0.19	-	0.25
0	x		0.26	-	0.28
	y		0.22	-	0.28
1	x		0.28	-	0.30
	y		0.25	-	0.31
2	x		0.30	-	0.32
	y		0.28	-	0.34
3	x		0.32	-	0.34
	y		0.30	-	0.36

* The CIE standard colorimetric system



■ Luminous intensity ranks

(Ta=25°C)

Iv RANK	Test Condition	Min.	Typ.	Max.	Unit
N	I _F = 20mA	600	–	850	mcd
O		850	–	1200	
P		1200	–	1700	
Q		1700	–	2400	

* Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of ±11%.

* Intensity Measured : 0.01sr(CIE. LED_B)

■ Precautions On LED using

* To avoid optical difference, Please do not mix differently-ranked product.

■ Characteristic Diagrams

Fig. 1 I_F - V_F

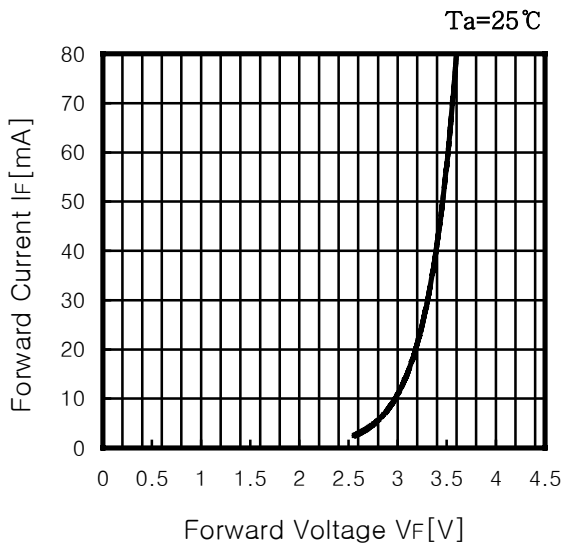


Fig. 2 I_V - I_F

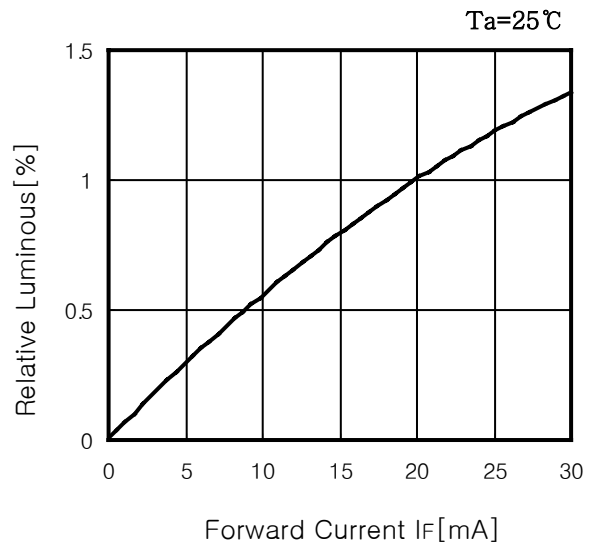


Fig. 3 I_F - T_a

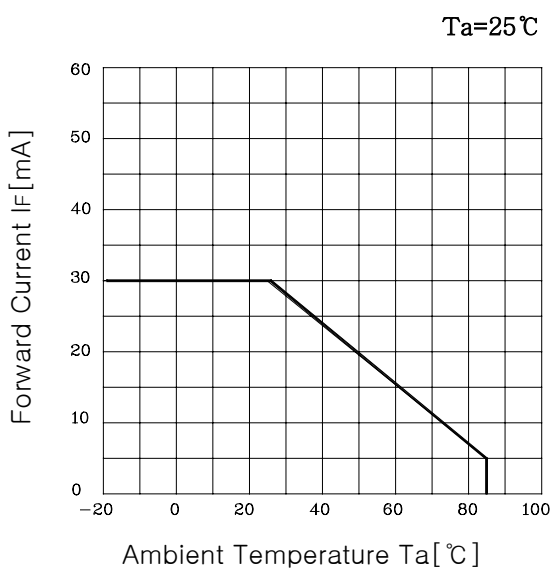


Fig. 4 Radiation Characteristics

($T_a=25^\circ\text{C}$, $I_F = 20\text{mA}$)

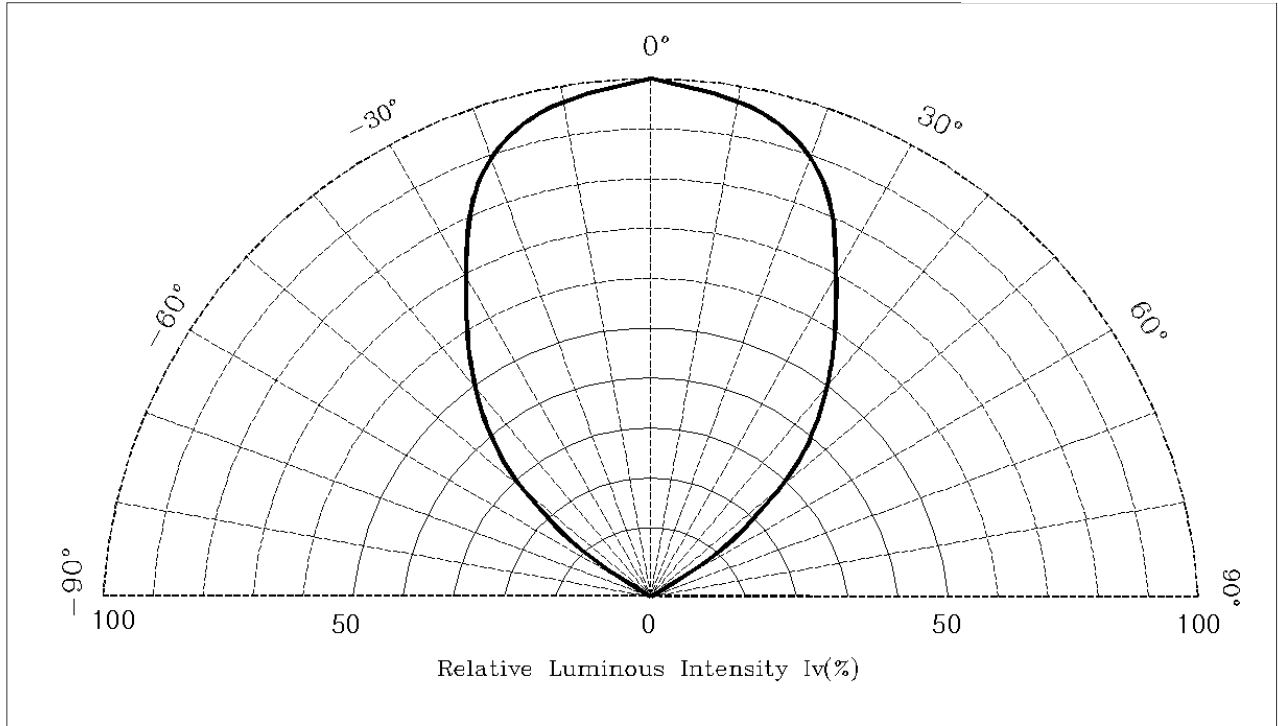
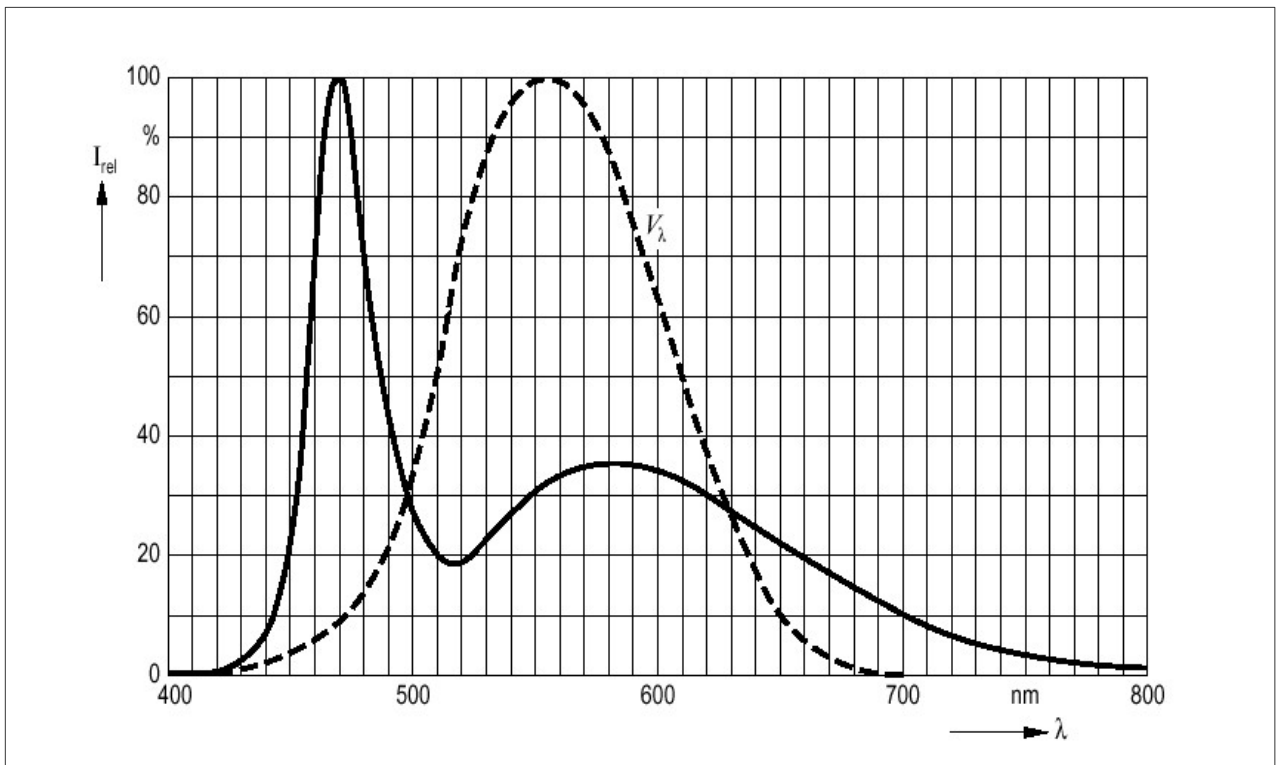


Fig. 5 Spectrum Characteristic

($T_a=25^\circ\text{C}$, $I_F = 20\text{mA}$)



■ Revision history sheet

Spec NO.			
Title	Specification for Approval		
Times	Date	Summary of revision	Remarks
1	2001. 07. 15	신규제정	
2	2003. 02. 26	Format 변경	